

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q82625

Tsukasa AGA

Appln. No.: 10/502,014

Group Art Unit: 1713

Confirmation No.: 8458

Examiner: William K. Cheung

Filed: July 20, 2004

For: AQUOES WATER- AND OIL-REPELLENT DISPERSION

**DECLARATION UNDER 37 C.F.R. § 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Takashi Enomoto, hereby declare and state:

THAT I am a citizen of Japan;

THAT I have received the master degree (department of chemical for materials) in 1986 from Mie University.

THAT I have been employed by DAIKIN INDUSTRIES LTD. since April 1, 1986, where I hold a position as researcher, with responsibility for research works on the development of the synthesis of fluorine-containing compound and the development of water and oil-repellent; and I worked in production department of fluorine-containing products between 1996 and 1999. Again, I started work for developing water and oil-repellent from 1999 to now. Especially, I worked in USA (DAIKIN AMERICA) between 2000 and 2006.

THAT I am familiar with the Office Action dated March 9, 2007, wherein claims 1, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oharu et al., U.S. Patent No. 6,610,775.

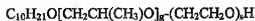
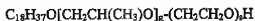
I report the below on my observation on Oharu et al., U.S. Patent No. 6,610,775.

## OBSERVATION

Oharu et al. (U.S. Patent No. 6,610,775) discloses the surfactant ( $b^1$ ) represented by the formula 5:



Oharu et al. describe that  $R^{10}$  may be of a linear structure or a branched structure (column 9, lines 53-54). Then, Oharu et al., at column 10, lines 1-7, describe six specific examples of the surfactant ( $b^1$ ) as follows:



In the six specific examples, only the fifth specific example has the branched structure in  $R^{10}$ . Other five specific examples have the linear structure:

The  $C_{18}H_{37}$  group in the first specific example is a n-stearyl group;

The  $C_{18}H_{35}$  group in the second specific example is a n-oleyl group;

The  $C_{16}H_{33}$  group in the third specific example is a n-hexadecyl group;

The  $C_{12}H_{25}$  group in the fourth specific example is a n-dodecyl group; and

The  $C_{10}H_{21}$  group in the sixth specific example is a n-decyl group.

The  $(C_8H_{17})(C_6H_{13})CH$  group in the fifth specific example has the branched structure, but is quite different from the isotridecyl group defined in the present claim 1 which is

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- (i) a C<sub>13</sub> isotridecyl group having 4 side-chain methyl groups, that is, CH<sub>3</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>-, or
- (ii) a C<sub>13</sub> isotridecyl group having 6 side-chain methyl groups, that is, CH<sub>3</sub>C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>C(CH<sub>3</sub>)<sub>2</sub>CH<sub>2</sub>-, or CH<sub>2</sub>(CH<sub>3</sub>)CH(CH<sub>3</sub>)CH(CH<sub>3</sub>)CH(CH<sub>3</sub>)CH(CH<sub>3</sub>)CH(CH<sub>3</sub>)CH<sub>2</sub>-, or
- (iii) a C<sub>13</sub> isotridecyl group having 3 side-chain ethyl groups, that is, CH<sub>3</sub>CH(C<sub>2</sub>H<sub>5</sub>)CH<sub>2</sub>CH(C<sub>2</sub>H<sub>5</sub>)CH<sub>2</sub>CH(C<sub>2</sub>H<sub>5</sub>)CH<sub>2</sub>-.

Main differences between the (C<sub>8</sub>H<sub>17</sub>)(C<sub>6</sub>H<sub>13</sub>)CH group described in Oharu et al. and the isotridecyl group defined in the present claim 1 are that the type and number of the pendent groups are quite different. In the former, the type of the pendent group is the octyl group (C<sub>8</sub>H<sub>17</sub>) or the hexyl group (C<sub>6</sub>H<sub>13</sub>) and the number of the pendent group is one. In the latter, the type of the pendent group is the methyl group (CH<sub>3</sub>) or the ethyl group (C<sub>2</sub>H<sub>5</sub>) and the number of the pendent group is from 3 to 6.

I believe that the skilled person cannot easily conceive the use of the isotridecyl group by considering the recitation of Oharu et al., since the branched structure disclosed in Oharu et al. includes many specific types of group.

Comparative Example 4 of the present Description uses polyoxypropylene polyoxyethylene cetyl ether which corresponds to formula 5 recited in Oharu et al., wherein the R<sup>10</sup> group is the cetyl group (namely, n-cetyl group) having the straight structure. That is, polyoxypropylene polyoxyethylene cetyl ether used in Comparative Example 4 of the present Description is included in the surfactant (b<sup>1</sup>) represented by the formula 5 recited in Oharu et al. Comparative Example 4 corresponding to Oharu et al. gives poor properties such as durability of repellency and mechanical property, as shown in Table B of the present Description. In contrast, Examples 1 to 4 of the present Description, which use the surfactant having the isotridecyl group defined in the present claim 1, give excellent properties, as shown in Table B of the present Description.

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I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: July 4, 2007

  
Takashi Enomoto